

To the RIGHT HONOURABLE the

LORD MAYOR,

**SHERIFFS, COMMONS,
and CITIZENS of the
City of DUBLIN,**

This Scheme for Essex-Bridge

Is most humbly inscribed by

Your LORDSHIP'S

most obedient

humble Servant,

*April 25th,
1752.*

MICH. WILLS.

1851.267

A
S C H E M E

For ENLARGING

ESSEX-BRIDGE:

WHEREBY,

Not only Three-fourths of the Expence of a New Bridge will be saved, but the PUBLICK shall enjoy the Benefit in Six Months.

THE repairing of *Essex*-bridge being a matter of no small consequence to the City, it is very reasonably expected that every person, who has any knowledge this way, should set his hand to the work: not only out of private advantage to himself; but from a duty he owes to the PUBLICK. And where both these agree, surely a man will be doubly diligent.

As bridge-building is a kind of work which happens but seldom ; it is not to be supposed that any person here can have much experience therein : nevertheless, I shall venture to say, I have had my share. But with regard to other works in Architecture, both publick and private, it has been the employment of my whole life.

ABOUT a year ago, when this accident happened to one of the piers of the bridge, by the east point thereof falling down, I immediately betook myself to consider of a method to repair it. And against the latter end of *May*, had a plan prepared, together with a computation of the expence, amounting to the sum of eight hundred pounds. And it being the general complaint that the bridge was too narrow ; I considered also how it might be enlarged twenty-one feet in breadth, and made a separate calculation for this addition, amounting to two thousand pounds more.

THESE plans and calculations I laid before the Grand-Jury, on *Friday* the 12th of *July*, 1751 : who immediately seeing the reasonableness of the proposal, and necessity of the thing ;
agreed

agreed with me for the repair. The enlargement of the bridge being a work which might be done at any time hereafter.

In this repair, I proposed to take down and rebuild one pier and three arches, the full breadth of the bridge, including the Footway : and to underpin, and fresh pile the other piers where wanting. These three arches were to be raised higher, for better head-way to the lighters passing underneath, and uniformity of the bridge. And as all the remainder of the bridge is found to be very firm and secure ; the whole would thereby become much firmer than ever, in as much as the foundation of this new pier would be considerably deeper, and the other piers underpinned, and fresh piled. The depth of which pier making it more able to withstand the current, which tends all to this side : the other side never being pressed with any great weight of water. I likewise engaged to complete this work in five months, and named my security, which they were pleased to approve of, and directed the overseers to contract with me accordingly.

THE overseers having affairs of their own of greater moment, would not concern themselves: so that the next Grand-Jury thought themselves under a necessity of getting it repaired in wood, for a present passage, that the PUBLICK might not be wholly deprived of the use of the bridge: I being gone down to *Ratbnoo* near *Wicklow*, to build a bridge there.

BEFORE this, I attended all the assemblies at the *Tholfel* held on the occasion: where I declared my opinion absolutely concerning this repair and enlargement, that there was no necessity for pulling down the whole bridge! And afterwards declared the same to the Committee. But the opinion of others, who never had any experience in water-works, was better relished, as the whole Assembly was very fond of a new bridge, without considering the consequences, or circumstances. For instance. They do not know what will be the consequence of sinking the foundations of the land-breasts, or buttment-piers to a sufficient depth. I do not suppose they imagine it will be the destruction, not only of the buildings at each end of the bridge, but also endanger the
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the houses along the quays. For, as these buttment-piers must run into the land at least sixteen feet, or perhaps twenty-four, if the ground shall be found to slip; it will make a very great chasm.

As for the expence, it is not of any mighty consequence. And the want of a bridge, while the work shall be carrying on, may be supplied by a wooden bridge, for twelve hundred pounds. This being but a small matter, as it may be afterwards sold for near one half of what it first cost. Or else by boats, which will be the more inconvenient.

The opinion then prevailing that *Essex*-bridge must be pulled down, and a new one built in the room of it, made of hewn stone in the best manner, as appears by advertisements in the publick papers: I sat down again to consider this new bridge, in order to give the PUBLICK all the satisfaction in my power. And accordingly prepared a plan, and calculation of the expence, amounting to sixteen thousand pounds, over and above the twelve hundred for the wooden bridge,

bridge, and the loss of the houses at each end, and other damages unknown.

THIS new bridge I intended fifty six feet wide from out to out, and forty eight feet in the clear, to be built on five arches, all of hewn stone in the best manner of rustick work from the foundation. The stones in the foundation to be very large, considerably more so than in any other part, all firmly cramped together with bars of iron run with lead: and the courses to diminish gradually as the work shall rise. The rustick work to begin from the bottom of the piers, fifteen feet under low water, where must be two sets-off of half a foot each, and likewise another set-off of half a foot about two feet under low-water. This rustick work to continue throughout: not only on the faces and sides of the piers and bridge, but through the soffets or undersides of the arches from side to side, which cannot appear in the plan. The whole to be composed with a grand ballustrade above man's height, and crowned with obelisks to carry the lamps: as by a particular description laid before the Committee may more fully appear.

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I must confess such a bridge would be a very desirable thing; not only as it would be an ornament to the City, but set forth its magnificence also. And if we laboured under no other difficulty than the expence, I should contribute towards it with the greatest cheerfulness. But our river is confined between walls, with houses all along the quays very near the river: that there is no determining the consequences of making buttment-piers sufficient for such a sumptuous bridge.

THE present bridges have but small arches, and their buttment-piers go but a small way into the land: nor was the river so confined when they were built. But here the buttment-piers going considerably further; the danger will be so much the greater in the execution. It is both equitable and prudent to listen to all opinions: but, if in the end we follow that of the less experienced, we must blame only ourselves for the consequences.

THEREFORE to leave this to be wished-for-bridge, let us consider what is now proposed. I think an entire new bridge will hardly be built at a less expence than before mentioned, nor can it well be finished in less than five years.

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And as I hear that all thoughts of building a wooden bridge for the conveniency of Passengers in the mean time is quite laid aside; let us now consider whether the building of an entire new bridge will not be attended with such inconveniencies as will go near to destroy the Trade of the City. For, do but let us suppose the present bridge once rendered impassable, how will the Traffick and Commerce of the City be carried on from one side to the other? I know it has been proposed to allow a number of Boats: but, as in this river, the Boats can only cross at high Water except in very few places, this method of Conveyance will answer but very few Purposes. For though a few light foot Passengers might cross the River in a Boat, this kind of conveyance is impracticable for coaches, or carts, or even for loaded porters. So that *Ormond's* bridge must be the general place of Communication between the two Parts of this City, which considering the Steepness of its Ascent on either side, and the very great narrowness of those streets which lead to it, will be attended with infinite Inconveniencies. And

as one of the Piers of that Bridge is very near as ruinous as any one of those belonging to *Effex* Bridge, if that Pier should give way in the intermediate Time before *Effex* Bridge is restored, what confusion must this create in this populous City? I dread the Consequence.

I shall therefore return to consider the Scheme for repairing *Effex* Bridge. Upon which, if one thousand pounds be laid out immediately to make good the present Bridge in the manner I first proposed; the PUBLICK may have the use thereof in the space of six months. Which being done, we may then proceed on the addition to be made to the breadth on the east side, which will require two seasons; one for the piers, and the other for the arches, and, as I said, will cost two thousand pounds. This addition may be decently ornamented in rustick: and also with a ballustrade, and obelisks, like the new bridge, (if it shall be thought proper,) for about five hundred pounds more, making in the whole, the sum of three thousand five hundred pounds. And all the ends of the PUBLICK fully answered, both as
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to use, strength, and ornament: without endangering the houses on the quays, or destroying even those at the ends of the bridge, excepting one at the north-east corner.

It is not my intention to go about to lead my fellow Citizens astray! Far be it from me. I have no private view therein. If I had advised a new bridge, possibly I might lie under such a censure. The laying out of large sums of publick money will always be of private advantage to some. But, it cannot be supposed that this is to be the sole motive for so doing. Yet, I can recollect instances where one would imagine something like it.

TRUTH requires no art, but that of being made known. And the Grand-Jury will never consent to the pulling down of *Essex*-bridge, purely for the sake of Grandure.

If I am rightly informed, one of the piers of *Ormond*-bridge is greatly undermined, and in much danger. If the point of this pier should happen to drop, I suppose the whole bridge must be pulled down. But it is all for the Publick good! If any part of a building shall happen to fail: the whole must be destroyed! Indeed, where people have mo-

ney enough, it may be thought commendable so to do, as it will employ many hands: but this does not argue the necessity of the thing.

THE PUBLICK utility is always to be considered. And the question now is, Whether it will be of advantage to the PUBLICK to pull down *Essex*-bridge, or not.

I know it will be said, that I am wanting a jobb. And so let it be, if I can at the same time save the PUBLICK some thousands. I said in the beginning, that where private interest is consistent with PUBLICK good, there is a double reward, and it is our duty to pursue it.

As to my making observations upon bridges with fix arches, or any even number of arches, I need not be at the trouble. The PUBLICK will easily see whether it be consistent with the rules of good ARCHITECTURE.

A computation of the expence of building Essex-bridge on five arches, in brown-stone from the foundation, which is to begin from the rock. The bridge to be 244 feet in length, and 56 in breadth. In height from low-water to the pavement in the middle, 30 feet, and 24 $\frac{1}{2}$ at each end: with a ballustrade seven feet high, and six obelisks on each side, 15 feet high above the ballustrade, to carry the Lamps.

[illegible]

Engines, gabboards, tackle, &c.	—	—	Brought forward	15618	16	6
Arch to the statue, and making good	—	—	—	1000	—	—
	—	—	—	50	—	—
	—	—	—	16668	16	6

Sixteen thousand six hundred and sixty eight pounds, sixteen shillings, and sixpence. May 14th, 1752.

MICH. WILLS.

Expence of the works under water extracted from the foregoing computation.

Caiffon	—	—	16138 feet,	at 2 s. 6 d. per foot,	2017	5	—
Fender-piles, and piles to stop the gravel	—	—	—	—	500	—	—
Mountain-stone	—	—	3728 tuns,	—	3728	—	—
Workmanship	—	—	1894 perches, at 10 s. per perch,	—	947	—	—
Digging the foundations	—	—	16488 tuns, at 1 s. 6 d. per tun,	—	1236	12	—
Engines, gabboards, tackle, &c.	—	—	—	—	1000	—	—
	—	—	—	—	—	—	—
	—	—	—	—	9428	17	—
	—	—	—	—	7239	19	6
	—	—	—	—	—	—	—
	—	—	—	—	16668	16	6

Works under Low-water

Works above Low-water

Total expence as above